Formal Inspection: Course Description

Software inspection is a well-defined review process for finding and fixing defects in work products from all phases of software development.

Inspections have proven time and again to be one of the most effective practices available for ensuring quality software and on-time deliveries. Many studies have demonstrated their benefits, both within NASA and across many industrial organizations, including:

- Reduced cost and improved quality by reducing rework. *Studies have shown that the rework effort saved not only pays for the effort spent on inspections, but also provides additional cost savings on the project.* By removing defects at their origin, inspections prevent them from propagating through multiple phases and work products, and reduce the overall amount of rework necessary on projects.
- Improved software team efficiency: Side-effects of inspection meetings include improving team communication, more quickly bringing new members up to speed, and educating project members about effective development practices.

This training course provides all the information needed for conducting software inspections on a project. The course:

- Describes the process, roles, and responsibilities involved;
- Provides experience-based guidance on all activities, including
    - Planning and scheduling the inspections,
    - Preparing for and moderating the meetings,
    - Closing the identified defects in a timely manner.

These guidelines are based on the experiences and lessons learned from literally hundreds of inspections at NASA Centers.

Since all projects are different, an emphasis in this course is on tailoring the processes to a team's particular needs, maximizing project benefit. Interactive sessions are included that use previous experience and past defect histories to best focus the inspections on the issues that really matter. The training also includes a hands-on workshop, where the process is applied to a work product from the participants' current project. The participants leave with a list of real defects identified and clear guidance on how to proceed.

Background: All of the process recommendations contained in this course represent the best practices drawn from many NASA programs, including:

- Highly successful inspection programs previously instituted at JPL and GRC;
- Results from NASA-funded research that piloted improved inspection approaches with teams at multiple Centers;
- Lessons learned from veterans of project teams that implemented inspections successfully on their own.